

DOUGLAS AIRCRAFT COMPANY

MCDONNELL DOUGLAS



3855 Lakewood Boulevard  
Long Beach, California 90801

REFERENCE:  
BULLETIN 54-59

# DC-10

## SERVICE BULLETIN CHANGE NOTIFICATION

SUBJECT: NACELLES/PYLONS - Attach Fittings - Lubricate/Replace Engines 1 And 3  
Forward Attach Monoball Bearings.

MODELS, All Model DC-10, Series 10, 30, and 40 aircraft, Fuselage No. 1 thru 267.

This Change Notification is published to inform affected operators that Service Bulletin 54-59, Figure 1, work steps 5 and 6 are not applicable to Fuselage No. 1 thru 205. These aircraft were delivered with AUB7065-1 or AUB7065-501 wing-to-pylon attach plugs manufactured from titanium and must not be plated with sulfamate nickel. It is requested that operators of aircraft Fuselage No. 1 thru 205 delay incorporation of Service Bulletin until modification instructions for AUB7065-1 and -501 plugs are corrected.

Revision 1 to Service Bulletin, scheduled for release in September 1978, will correct instructions.

Work steps 5 and 6 are correct for Fuselage No. 206 and subsequent which were delivered with AUB7065-503 plug manufactured from steel.

KLB

DOUGLAS AIRCRAFT COMPANY  
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PRODUCT SUPPORT

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DOUGLAS AIRCRAFT COMPANY

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**DC-10**

**SERVICE BULLETIN**

**REVISION TRANSMITTAL SHEET**

Bulletin 54-59

NACELLES/PYLONS - Attach Fittings - Lubricate/Replace Engines 1 And 3 Forward  
Attach Monoball Bearings.

This page transmits Revision 1 for DC-10 Service Bulletin 54-59 to incorporate the following changes:

NOTE: This revision constitutes a complete reissue.

Reason For Revision: To incorporate engineering released subsequent to original issue of this Service Bulletin which provides instructions for removing corrosion and adds protective coating that will be compatible with new monoball bearing materials. Additional work is required by this revision for operators who have complied with original issue of this Service Bulletin and removed corrosion from monoball bearings and/or attach plugs.

NOTE: An additional 8.0 man-hours or 2.0 elapsed hours are required to check monoball bearings and attach plugs for maximum clearance. These additional man-hours or elapsed hours do not include time for engine or pylon removal. (See paragraph 2, General Notes 2 and 3.)

Service Bulletin Change Notification dated June 7/78 is incorporated by this Revision.

Page 1 thru 4: Changed page number to 1 of 16, was 1 of 15.

Reassigned Factory Serial Numbers 46556 (No. 146) and 46557 (No. 197) to operator VA, were assigned to operator KL.

Page 7: Added Structural Repair Manual, Chapter 54, Temporary Revision 54-33, and Maintenance Manual, Chapter 12 to References.

Changed AUB7065 drawing to "R" change, was "N" change.

Pages 9 thru 11: Revised Group I, Phase 1, paragraphs 2.C thru 2.H and added paragraphs 2.I thru 2.M to provide instructions for removal of corrosion and lubrication of monoball bearings.

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- Pages 9 thru 11:  
(Cont)
- Added "ASSB64" to paragraph 2.D, Group I, Phase 2.
  - Added "ASSB100" to paragraph 2.I, Group I, Phase 2.
  - Added paragraph 2.K, Group I, Phase 2 to provide instructions for lubricating monoball bearings.
  - Added Group II, paragraphs 2.A and 2.B to provide instructions for lubricating monoball bearings.
- Page 12:
- Revised step 5 as applicable to AUB7065-503 plug only, was AUB7065-1, -501, or -503 plugs.
  - Revised step 6 to inform operators that reidentification of AUB7065-1 or -501 plugs is at operator's option.
- Page 13:
- Revised Section B-B, step 5, to reflect surface to be plated.
- Page 15:
- Added "ASSB64" and "ASSB100" spherical bearing and supplier source.
  - Added 1,1,1, Trichloroethane solvent.
  - Changed Parker-O-Lube, Lubricant source to current listing.
- Page 16:
- Revised paragraph 3.A(2) reidentification instructions.

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DOUGLAS AIRCRAFT COMPANY

MCDONNELL DOUGLAS



3855 Lakewood Boulevard  
Long Beach, California 90801

# DC-10

REFERENCE:  
BULLETIN 54-59

## SERVICE BULLETIN SUMMARY

**NOTE:** This summary is for information only and is not FAA approved for modification of aircraft.

**SUBJECT:** NACELLES/PYLONS - Attach  
Fittings - Lubricate/Replace  
Engines 1 And 3 Forward Attach  
Monoball Bearings.

**EFFECTIVITY:** Model DC-10, Series 10, 30, and 40 aircraft. Mfr's Fuselage No. 1 thru 28, 30 thru 80, 82 thru 86, 88 thru 108, and 110 thru 267. (See Service Bulletin 54-59 for applicable group.)

### NOTE

Phase 1 is applicable only to those aircraft which have dry lube monoball bearings installed in the forward wing-to-pylon attach fittings.

**COMPLIANCE:** It is recommended this modification be accomplished at operator's convenience.

Phase 1 was accomplished on Group II aircraft prior to delivery.

### MANPOWER:

	Group	
	I	II
Phase	1	2

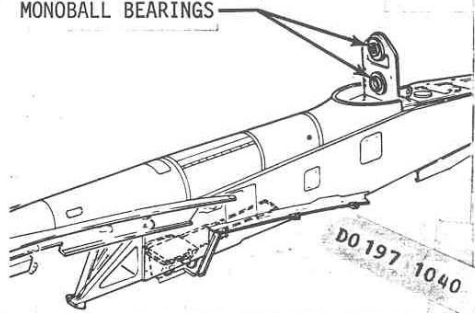
Total Man-Hours -	62.8	78.0	78.0
Total Elapsed Hours -	11.6	15.0	15.0

**ANALYSIS:** Eight operators have reported unsatisfactory performance of the dry film lubricant used on the forward upper and lower wing-to-pylon attach monoball bearings. This condition is due to wear of the dry lube finish on the surface of the monoballs and the presence of corrosion pits on the surfaces which lose the dry lube finish. Corrosion pits have developed on bearings having logged 2000 flight-hours. If not corrected, the corrosion would continue to be a maintenance problem, and the bearings could possibly seize.

**MATERIAL INFORMATION:** Phase 1 - Twelve PLI washers, lubricant, and four "O" rings are required per aircraft to accomplish this modification and are to be procured from operator's stock or suppliers. Phase 2 - Four new spherical bearings, ten lubrication fittings, twelve PLI washers, and four "O" rings are required per aircraft to accomplish this modification and are to be procured from operator's stock or suppliers.

**CORRECTIVE ACTION:** Group I - Phase 1 - Lubricate (hand pack) the existing forward upper and lower wing-to-pylon attach monoball bearings. Phase 2 - Revise the plugs for the forward upper and lower wing-to-pylon attach monoball bearings by adding lubrication fittings and replace the dry lube or teflon lined monoball bearings with lubricated bearings. Group II - Accomplish work outlined under Group I, Phase 2.

LUBRICATE/REPLACE  
MONOBALL BEARINGS



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DOUGLAS AIRCRAFT COMPANY

MCDONNELL DOUGLAS

CORPORATION

DC-10

3855 Lakewood Boulevard  
Long Beach, California 90801

BULLETIN 54-59

**SERVICE BULLETIN**NACELLES/PYLONS - Attach Fittings - Lubricate/Replace Engines 1 And 3 Forward  
Attach Monoball Bearings.NOTEPhase 1 is applicable only to those aircraft which  
have dry lube monoball bearings installed in the  
forward wing-to-pylon attach fittings.Phase 1 was accomplished on Group II aircraft prior  
to delivery.1. Planning Information:A. Effectivity:(1) Aircraft Affected:Model DC-10, Series 10, 30, and 40

<u>Operator</u>	<u>Factory Serial No.</u>	<u>Mfr's Fuselage No.</u>
	<u>Group I</u>	
AA	46500 46502 thru 46525	1 3, 5, 7, 9, 12, 13, 20 thru 24, 30, 31, 37, 48, 49, 51, 52, 54 thru 56, 58, 65, and 72
AM	46936 and 46937	147 and 152
AY	47956 and 47957	181 and 201
AZ	47861 thru 47868	75, 88, 94, 121, 135, 149, 178, and 200
BR	46921 46949	214 179 <b>D0197 1041</b>
CO	46900 thru 46904 47800 thru 47810	34, 40, 41, 43, and 44 92, 98, 101, 139, 142, 145, 148, 173, 177, 191, and 194

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<u>Operator</u>	<u>Factory Serial No.</u>	<u>Mfr's Fuselage No.</u>
GK	46727 46905 and 46906	83 47 and 50
IB	46922 46926 and 46927 46953 47980 and 47981	221 99 and 100 225 150 and 186
JL	46660 and 46661 46920 46923	220 and 224 212 216
KE	46912 46915 46934 47887	188 199 160 125
KL	46550 thru 46554 46914 46933 46952	46, 60, 71, 82, and 84 195 159 185
LH	46917 47921 thru 47929	211 117, 122, 123, 129, 166, 170, 190, 192, and 196
MP	46891 46924	127 218
NA	46700 thru 46703 46706 thru 46714  46942 and 46943	14, 16, 18, and 19 38, 61, 62, 68, 70, 105, 106, 165, and 167 162 and 163
NW	46750 thru 46771	28, 36, 53, 66, 79, 97, 102, 108, 111, 113, 120, 124, 126, 128, 130, 143, 151, 161, 164, 168, 175, and 180
OV	46825 and 46826	81 and 109
PK	46931 46935 46940	137 172 141

<u>Operator</u>	<u>Factory Serial No.</u>	<u>Mfr's Fuselage No.</u>
	<u>Group I (Cont)</u>	
NW	46750 thru 46771	28, 36, 53, 66, 79, 97, 102, 108, 111, 113, 120, 124, 126, 128, 130, 143, 151, 161, 164, 168, 175, and 180
OV	46960 46962	237 238
PK	46931 46935 46940 47889	137 172 141 229
PR	46958	232
QC	46932 47886	158 90
RG	46916 46941 46944 and 46945	202 176 133 and 156
RK	46890 46892	77 204
SK	46868 thru 46872	171, 174, 217, 219, and 233
SN	47906 thru 47908	115, 157, and 215
SR	46575 thru 46582 46969	57, 73, 114, 131, 132, 183, 184, and 187 241
TE	46910 and 46911 46950 46954 47846 thru 47849	182 and 189 242 227 69, 116, 136, and 213
TG	46959 46961	234 236
TK	46705 46907	33 78

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<u>Operator</u>	<u>Factory Serial No.</u>	<u>Mfr's Fuselage No.</u>
<u>Group I (Cont)</u>		
TV	46800 thru 46802	96, 103, and 110
UA	46600 thru 46631	4, 6, 8, 10, 11, 15, 17, 25 thru 27, 32, 35, 39, 42, 45, 76, 86, 89, 118, 119, 138, 140, 144, 154, 155, 169, 198, 205, and 207 thru 210
	47965 thru 47969	59, 64, 67, 74, and 80
UT	46850 thru 46854	63, 85, 93, 134, and 193
	46963	244
VA	46555 thru 46557	91, 146, and 197
WA	46908	95
	46928 thru 46930	104, 107, and 112
	46938 and 46939	153 and 203
	46946	222
WT	46957	231
	46968	243
<u>Group II</u>		
AA	46947 and 46948	247 and 249
	46984	250
BR	46590	266
GA	46951	246
JL	46966 and 46967	262 and 265
JU	46981	259
LH	46965	245
MP	46985	264
OV	46992	257
SQ	46990 and 46991	260 and 261
	46993	263
VA	46971	258

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<u>Operator</u>	<u>Factory Serial No.</u>	<u>Mfr's Fuselage No.</u>
	<u>Group II (Cont)</u>	
WA	46977	251
	46983	252
WD	46976	254
	46978	256
WO	46975	248
	46986 and 46987	253 and 255
YBB	46998	267

Affected aircraft other than those listed above will be modified prior to delivery or included in a subsequent revision to this Service Bulletin.

Manufacturer's fuselage numbers are applicable to affected aircraft at time of Service Bulletin issue and are for reference only.

(2) Spares Affected:

None.

B. Reason:

Eight operators have reported unsatisfactory performance of the dry film lubricant used on the forward upper and lower wing-to-pylon attach monoball bearings. This condition is due to wear of the dry lube finish on the surface of the monoballs and the presence of corrosion pits on the surfaces which lose the dry lube finish. Corrosion pits have developed on bearings having logged 2000 flight-hours. If not corrected, the corrosion would continue to be a maintenance problem, and the bearings could possibly seize. Replacing the monoball bearings with bearings that can be lubricated will significantly increase the service life of the bearings.

C. Description:

This modification accomplishes the following:

Group I

Phase 1 - Lubricates (hand packs) the existing forward upper and lower wing-to-pylon attach dry lube monoball bearings.

Phase 2 - Revises the plugs for the forward upper and lower wing-to-pylon attach monoball bearings by adding lubrication fittings and replacing the existing dry lube or teflon lined monoball bearings with lubricated bearings.

Group II

Accomplishes work outlined under Group I, Phase 2.

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D. Compliance:

It is recommended this modification be accomplished at operator's convenience.

E. Approval:

This Service Bulletin is FAA approved.

F. Manpower:

The following man-hours do not include time for nickel plating required per this Service Bulletin.

This modification may be accomplished in the following approximate man-hours or elapsed hours per aircraft.

<u>Work Phases</u>	<u>Man-Hours</u>		
	<u>Group</u>		<u>II</u>
	<u>I</u>	<u>II</u>	
	<u>Phase</u>		
	<u>1</u>	<u>2</u>	
Raise and Shore Aircraft	5.5	5.5	5.5
Gain Access	24.0	28.0	28.0
Modify (Bench)		10.0	10.0
Lubricate	.8		
Remove Shoring and Lower Aircraft	28.0	30.0	30.0
Functional Check	4.5	4.5	4.5
Total Man-Hours	62.8	78.0	78.0
Total Elapsed Hours	11.6	15.0	15.0

NOTE: This Service Bulletin assumes that the aircraft/unit has been placed in a maintenance status. The man-hour/elapsed time estimates do not include:

1. Preparation for the modification: Examples; defueling, purging, placing work stands, opening standard access doors, obtaining tools, and jacking when jacking is not essential to the modification.
2. Nonproductive elapsed time: Examples; sealant or adhesive cure time, cleaning, paint drying time, lunch and/or rest periods, and quality assurance inspections.

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3. Administrative functions: Examples; planning, engineering liaison, parts requisition, shift change coordination, and report writing.

Operators should take the above into consideration when scheduling this modification.

G. Material - Cost and Availability:

(1) Aircraft:

Parts/materials required to accomplish this modification are to be procured from operator's stock or sources indicated in paragraph 3.A.

(2) Spares:

Not applicable.

H. Tooling - Price and Availability:

None.

I. Weight and Balance:

None.

J. References:

- (1) This Service Bulletin may be accomplished in conjunction with DC-10 Service Bulletin 54-54 (Series 10 aircraft) or 54-57 (Series 30 and 40 aircraft) for convenience of maintenance.
- (2) Douglas letter, C1-750-475/Com Programs (AOL 10-299), dated November 22, 1972, ATA File Code 10-54-41-01.
- (3) Douglas letter, C1-750-188/Com Programs (AOL 10-299A), dated June 8, 1973, ATA File Code 10-54-41-01.
- (4) Douglas letter, C1-750-321/Com Programs (AOL 10-299B), dated August 8, 1974, ATA File Code 10-54-41-01.
- (5) Data used in preparation of this Service Bulletin:

<u>Data Identification</u>	<u>Change</u>	<u>Type of Data</u>
AUB7023	Z	Advance E.O.
AUB7023	002A	Serial E.O.
AUB7065	R	Drawing
AUB7066	K	Advance E.O.
CMM Chapter 20		Component Maintenance Manual
MM Chapter 12 and 54		Maintenance Manual
SRM Chapter 54		Structural Repair Manual
TR 54-33, dtd June 8, 1978		

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K. Publications Affected:

The modification outlined in this Service Bulletin affects the following  
DAC DC-10 aircraft publications.

PublicationChapter and/or Section

Illustrated Parts Catalog  
Maintenance Manual

54-00  
12-21

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3. Material Information:A. The basis for the following material data is per aircraft.

Parts to be procured from operator's stock or sources indicated.

NOTE: Maximum quantity of 2 bearings required per aircraft. Part number, quantity, and size of bearings to be determined upon inspection. Oversize bearing to be used only when damage is evident.

FSCM indicates Federal Supply Code for Manufacturers.

<u>New Part No.</u>	<u>Qty</u>	<u>Key Word</u>	<u>Old Part No.</u>	<u>Instructions- Disposition</u>
KMS1005	As Reqd	Bearing (.002(.0508)- inch oversize)	KSBY22N1, ATBY22V4, BLFR22-034, YTA301, 76689, LHSSR22-77, LHSS22-77, or KSBY22-2	1/ 2/ 3/ Discard
or KMS1006		Bearing (.010(.2540)- inch oversize)		
or KMS1007		Bearing (.020(.5080)- inch oversize)		
or KMS705		Bearing (.030(.7620)- inch oversize)		
or LH22F				
or 79828				
or KSBY22-5		Bearing (Standard)		
or BSSR-22220				
or NSS22D				
or 79583				

- 1/ The KMS705 (.030-inch oversize) bearings may be purchased from the Douglas Aircraft Company. Cost and availability of oversize bearings will be furnished upon request. Direct inquiries to:

Douglas Aircraft Company  
P.O. Box 1771  
Long Beach, California 90801  
Attn: Parts Sales - Commercial 7-21  
(DC-10 Service Bulletin 54-48)

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- 2/ The LH22F or 79828 bearings (.030(.7620)-inch oversize) are listed as authorized substitutions for the KMS705 oversize bearing. The BSSR-22220, NSS22D, or 79583 bearings are listed as authorized substitutions for the KSBY22-5 bearing. Bearings may be purchased from the following suppliers:

<u>New Part No.</u>	<u>FSCM</u>	<u>Supplier</u>
BSSR-22220 Bearing	81376	Southwest Products Company P.O. Box 1026 Monrovia, California 91016
KSBY22-5 Bearing	97613	Sargent Industries Kahr Bearing Division 3010 North San Fernando Boulevard Burbank, California 91506
LH22F Bearing (.030(.7620)- inch oversize) NSS22D Bearing	73134	Heim Universal Corporation Incom International Incorporated 60 Round Hill Road Fairfield, Connecticut 06430
79583 Bearing 79828 Bearing	09455	Lear Siegler Incorporated Transport Dynamics Division 3131 Segerstrom Avenue Santa Ana, California 92702

- 3/ The KMS1005 (.002(.508)-inch oversize), KMS1006 (.010(.2540)-inch oversize), and KMS1007 (.020(.5080)-inch oversize) bearings may be purchased from the following suppliers:

<u>New Part No.</u>	<u>FSCM</u>	<u>Supplier</u>
KMS1005 or KMS1006 or KMS1007	04795	Airsupply Company Division of Garrett Corporation 18700 Crenshaw Boulevard Torrance, California 90504
	Not Available	or Allied Bearing Supply Company 416 South Utica Avenue Tulsa, Oklahoma 74101
	06260	or Bobker Bearings, Incorporated 29-02 39th Avenue Long Island City, New York 11101
	Not Available	or Florida Bearings 3164 North Miami Avenue Miami, Florida 33127

B. The basis for the following material data is per spares:

Discard spare LHSS22-77 bearing and order KSBY22-5 or NSS22D bearing as replacement.



- F. Remove and retain lower wing-to-pylon attach plug and attaching parts. Discard 62524-9-24.9 PLI washers. (See Chapter 54-00-00.)
- G. Remove lower monoball bearing. Retain attaching parts.
- H. Modify lower wing-to-pylon attach plug as shown on Figure 1.
- I. Install new 79749, HSPF-100-MD, KSB100-3, AMB100-100, or ASSB100 spherical bearing (monoball) using retained attaching parts.
- J. Install lower wing-to-pylon attach plug using retained attaching parts and six new 62524-9-24.9 PLI washers.
- K. Lubricate upper and lower bearings. (See Chapter 12-21-02, paragraph entitled, "Power Plant and Accessories - Servicing.")

Group II

- A. Accomplish modification outlined under Group I, Phase 2.
- B. Lubricate upper and lower bearings. (See Chapter 12-21-02, paragraph entitled, "Power Plant and Accessories - Servicing.")

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## 3. Material Information:

## A. The basis for the following material data is per aircraft.

- (1) Parts and materials to be procured from operator's stock or sources indicated.  
Discard old bearings.

New Part No.	Qty Per Group			Key Word	Old Part No.	Instructions- Disposition
	I	II				
	Phase 1 2					
MS15001-1-1		10	10	Lubrication Fitting		
MS29513-030	4	4	4	"O" Ring		
62524-9-24.9	12	12	12	PLI Washer		
79748		2	2	Spherical Bearing	ATSB64-4	1/ 1/
or					or	
AMB64-100					KSBN64-7	
or					or	
ASSB64					YTD162A	
or					or	
HSPF-64-MD					BLFN64-012	
or					or	
KSB64-3					78986	
					or	
					LHSS64D	
					or	
					ASB64-4	
					or	
					B3-2873	
					or	
					LHSS64E	
79749		2	2	Spherical Bearing	ATSB100-4	1/
or					or	
AMB100-100					KSBN100-1	
or					or	
ASSB100					YTD163A	
or					or	
HSPF-100-MD					BLFN100-002	
or					or	
KSB100-3					78987	
					or	
					LHSS100D	
					or	
					LHSS100E	
Parker-O-Lube	1 Pt			Lubricant		1/
1,1,1, Trichloroethane	1 Pt			Solvent		Commercially Available

NOTE: FSCM indicates Federal Supply Code for Manufacturers.

1/ May be purchased from the following suppliers.

Part/Material	FSCM	Supplier
62524-9-24.9 PLI Washer	80539	Standard Pressed Steel Company Aerospace Products Division 2701 South Harbor Boulevard Santa Ana, California 92704
79748 Spherical Bearing	09455	Lear Siegler Incorporated Transport Dynamics Division 3131 Segerstrom Avenue Santa Ana, California 92702
or		
AMB64-100 Spherical Bearing	50294	NMB Corporation 9730 Independence Avenue Chatsworth, California 91311
or		

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<u>Part/Material</u>	<u>FSCM</u>	<u>Supplier</u>
HSPF-64-MD Spherical Bearing	73134	Heim Universal Corporation Incom International Incorporated 60 Round Hill Road Fairfield, Connecticut 06430
or		
KSB64-3 Spherical Bearing	97613	Sargent Industries Kahr Bearing Division 3010 North San Fernando Boulevard Burbank, California 91503
or		
ASSB64 Spherical Bearing	15860	New Hampshire Ball Bearings, Inc. Astro Division, 155 Lexington Avenue Laconia, New Hampshire 03246
79749 Spherical Bearing		Lear Siegler Incorporated
or		
AMB100-100 Spherical Bearing		NMB Corporation
or		
ASSB100 Spherical Bearing		New Hampshire Ball Bearings, Inc.
or		
HSPF-100-MD Spherical Bearing		Heim Universal Corporation
or		
KSB100-3 Spherical Bearing		Sargent Industries
Parker-O-Lube, Lubricant	83259	Parker-Hannifin Corporation O-Seal Division 10567 Jefferson Boulevard Culver City, California 90231

(2) Parts to be modified by the operator.

<u>New Part No.</u>	<u>Qty</u>	<u>Key Word</u>	<u>Old Part No.</u>	<u>Instructions- Disposition</u>
None	2	Plug Assy	AUB7065-1 or -501	1/
AUB7065-505	2	Plug Assy	AUB7065-503	2/
AUB7066-501	2	Plug Assy	AUB7066-1	2/

1/ Reidentification is at operator's option.

2/ To be reidentified by the operator.

B. The basis for the following material data is per spares.

None.

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